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Notes on the Species of CALOSOMA inhabiting the United States.

BY JOHN L. LECONTE, M. D.

The difference in the anterior tarsi of the males of certain species of Calosoma was first observed and made known by Schaum, (Ins. Deutschl. 1, 111,) and a grouping of the species was proposed according as the 4th joint was clothed beneath with a brush of hairs, like the preceding joints, or smooth and naked, as in the majority of the species. An attentive study of the sexual characters of those species represented in my collection has shown me that the number of divisions must be increased, in order that the species may be naturally grouped.

I would arrange our species as follows:—

Anterior tarsi of the male with the 4th joint hairy beneath:
- Thorax with sides broadly flattened behind, (body elongate)..... I.
- Thorax narrowed behind, sides not flattened..... II.

Anterior tarsi of the male with the 4th joint glabrous beneath:
- 3d joint of anterior tarsi ♂ glabrous beneath; thorax trisinuate behind... III.
- 3d joint of anterior tarsi ♂ hairy beneath:
  - Thorax truncate behind..... IV.
  - Thorax emarginate behind:
    - Body winged..... V.
    - Body without wings..... VI.

Group I.

The species of this group are remarkable for the long narrow body; the 5th and following joints of the antennæ are cylindrical and nearly equably pubescent; the thorax is rounded at the sides, very slightly emarginate at the base, which is not narrowed, but broad and flattened each side; the joints 1—3 of the anterior tarsi of the male are clothed beneath with a brush of hair; the 4th joint is hairy for a small space at the middle, and strongly spinous at the sides.

Our species are: 1. C. externum *Say*, (*longipenne* Dej.); 2. C. macrum *Lec.*, and

3. C. protractum, elongatum, nigrum, subnitidum, thorace latitudine duplo breviore, basi vix emarginato, subsinuato; margine incrassato, basi et lateribus punctato, his postice late modice reflexis, elytris thorace paulo latioribus, parallelis, subtiliter seriatim punctatis. Long. ·95—1·05.

Arizona; Dr. Irwine, U. S. A.

Group II.

The species of this group have the 5th and following joints of the antennæ cylindrical, nearly equably hairy; the thorax is comparatively small, much narrowed behind, with the base slightly rounded; the elytra are deeply striate and ovate, being gradually widened from the base; the joints 1—4 of the anterior tarsi of the male are covered beneath with a dense brush of hair, the first, however, being glabrous at the base; the 4th is very slightly spinous at the sides. Our species are:

4. C. scrutator *Fabr.* The middle tibiæ in the male are curved and both they and the hind tibiæ are furnished with a dense brush of hairs on the inner face near the tip. The species is found from Newfoundland to the point of Lower California.

5. C. Willcoxi *Lec.* Middle tibiæ of the male straight and not hairy.

6. C. frigidum *Kirby.* Middle tibiæ of the male slightly curved, and somewhat, though not densely, hairy on the inner face.

Group III.

The single species constituting this group has the outer joints of the antennæ cylindrical and equably pubescent; the thorax is narrowed behind and mode-

rately bisinuate at base; the elytra are striate and ovate, but longer than in the preceding group; the first joint of the anterior tarsi of the male is hairy beneath only for a small portion near the anterior margin; the 2d joint has the usual brush of hair; the 3d and 4th joints are entirely without hair.

7. C. Sayi *Dej.* The middle tibiæ of the male are very much curved, prolonged at tip on the inner face, and armed along the inner margin with several small distant teeth.

GROUP IV.

In this group are several species of a black color, with feeble or obsolete elytral striæ; the outer joints of the antennæ are cylindrical and equably punctured; the thorax is narrowed behind, sometimes angulated at the sides, with the base not at all emarginate, but truncate or slightly rounded; the joints 1—3 of the anterior tarsi of the male are clothed beneath with a dense brush of hair, the 4th is naked; nothing peculiar is seen in the form of the middle tibiæ of the male. All the species inhabit the plains of the central part of the continent

8. C. prominens *Lec.* (*angulatum*‖ Lec.); 9. C. lugubre *Lec.*

10. C. carbonatum, nigrum, subnitidum, thorace latitudine duplo breviore antice posticeque angustato, lateribus medio obtuse subangulatis; disco confertim subtiliter intricato-rugoso, lateribus parce punctatis, basi fere recte truncato, elytris subovatis, convexis, thorace latioribus, striis haud impressis subtiliter punctatis, foveisque obsoletis serie triplici impressis. Long. 1·00.

New Mexico and Upper Texas.

11. C. triste *Lec.*; 12. C. obsoletum *Say*, (*luxatum*‡ Dej.)

GROUP V.

The species here placed have the outer joints of the antennæ nearly cylindrical but less punctured on the sides; the thorax is more or less narrowed behind, and the base is distinctly emarginate; the joints 1—3 of the anterior tarsi of the male are clothed beneath with a dense brush of hairs, and the 4th is glabrous; the middle tibiæ of the male present no important characters. There is much difference in the sculpture of the elytra, the striæ being obliterated in C. semilæve, deep in calidum, confused in tepidum, badly defined in cancellatum, which has besides three rows of catenated elevations. All the species are found on the Pacific coast; C. calidum extends entirely across the continent from ocean to ocean.

13. C. semilæve *Lec.*; 14. C. calidum *Fabr.* (var. *lepidum* Lec.); 15. C. tepidum *Lec.*

16. C. cancellatum *Esch.* (var. *œnescens* Lec.)

GROUP VI.

In this group are placed species without wings, and generally of robust form; the outer joints of the antennæ are somewhat compressed and very conspicuously less punctured on the flattened sides, except in C. discors, in which the antennæ resemble those of the preceding group; the thorax is narrowed behind, and the base is very obviously emarginate; the joints 1—3 of anterior tarsi of the male are clothed beneath with a dense brush of hairs, and the 4th is glabrous; nothing remarkable is seen in the middle tibiæ of the male.

Four forms of elytral sculpture are seen.

a. Elytra with rows of close set punctures, the intervals each with a row of more distant punctures. 17. C. discors *Lec.*

b. Elytra with confused punctures and three rows of catenated elevations. 18. C. moniliatum *Lec.* 19. C. laqueatum *Lec.*

c. Elytra with confused punctures and three rows of faint foveæ. 20. C. Wilkesii *Lec.*

d. Elytra with fine striæ, the intervals crossed by transverse lines producing an imbricated appearance. 21. C. luxatum *Say.* (*C. striatulum* Lec. and *C. Zimmermanni* Lec. are varieties, or rather races, of this species.)